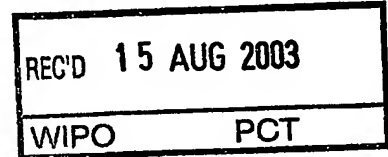


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## CERTIFICATE

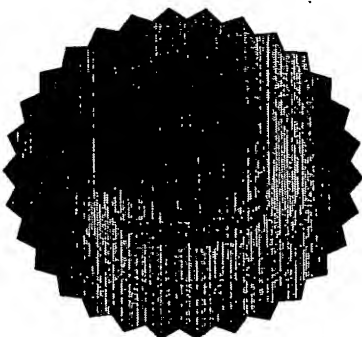
This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

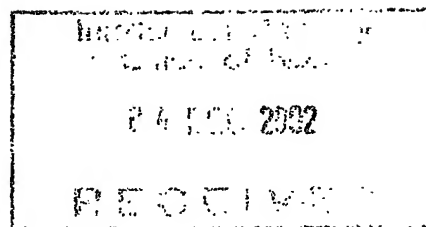
I hereby certify that annexed is a true copy of the Provisional Specification as filed on 4 December 2002 with an application for Letters Patent number 522958 made by David Falkiner Wallace.

Dated 31 July 2003.

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**PATENTS ACT 1953****PROVISIONAL SPECIFICATION****IMPROVEMENTS IN AND RELATING TO FASTENING APPARATUS**

I, David Falkiner Wallace, a New Zealand Citizen of 84 Plummer Road, R D, 6, Tauranga, New Zealand do hereby declare this invention to be described in the following statement:

# IMPROVEMENTS IN AND RELATING TO FASTENING APPARATUS

## TECHNICAL FIELD

This invention is directed to improvements in and relating to fastening apparatus.

5 It is envisaged the fastening apparatus will have particular application in relation to either or both doors and windows, in maintaining/securing the door and/or window in an opened position for a preferred period as required, at which time the fastening apparatus may be released enabling the door and/or window to be closed. However, the invention may have application outside this field.

## BACKGROUND ART

10 As can be appreciated, there are numerous ways to secure a window, door, gate, tailgate and so forth in an opened position.

Typically the apparatus used involves two separate, but interconnectable parts. One part is typically secured to an adjacent surface against which the opened window/door and so forth will lie adjacent to when in an opened position. The second part is  
15 typically attached to the door, window, and so forth, itself. Accordingly, when the door/window is in an opened position one part engages with the other part to maintain the door/window in the opened position as required.

Such systems include a hook-and-eye system, a bolt system and so forth. Typically there is an operating portion that may be affixed to either the door/window or the  
20 supporting surface as discussed above. Bolt operated systems may operate by moving rectilinearly, pivotally, or rotatably. Operation of the bolt by pulling or applying pressure to a handle portion in a direction towards or away from the direction of the door and/or window determines whether the bolt engages the receiving portion or is released therefrom as required.

Alternately, the fastening device may be in the form of an elongated hook capable of engaging in a keeper or eye to secure the hook in position.

Yet other fastening devices may include springs in conjunction with a pivoting or rectilinearly operated portion to improve the positive engagement or securing of the operating portion with the receiving portion. Spring-loaded latches on gates are an example of this.

Whilst all of the above devices are varying beneficial in securing a door/window/gate and so forth in an opened position, there are disadvantages associated with their use. For example, the hook and eye, or bolt options are required to be manually operated in order to secure the door/window in the first place, and then are typically manually operated to release the operating portion from the engaging portion by either lifting the hook or pulling open the bolt mechanism. Where the system is employed on a door – they are typically positioned towards the top or bottom of the door and therefore to be operated manually require a person to bend or stretch to release the catch and so forth.

The latching systems operating in conjunction with the springs, and so forth have some advantages over the previously described systems in that they may or may not require manual operation to secure the door or window in an open position. Pressure applied to the latch may be sufficient to deform the spring mechanism thereby enabling the latch to engage with the receiving portion on the gate/window/door. However, release of the latch is typically a manual operation requiring depression of a lever to release the latching apparatus. Again the same problems of bending or stretching of the operator is typically required.

Accordingly all of the above may be fiddly and/or difficult to operate depending on the tension or friction inherent when the door is secured in an open position. Where the spring and the latching system is particularly resilient it may require considerable force to enable the latching apparatus to be released.

Further, as such systems are typically positioned in less than convenient places an elderly or infirmed person may find the operation of such systems difficult or painful to achieve. In addition, where significant pressure is required or particular force is required to release the bolt, latch and so forth, the system may be inappropriate for  
5 people who lack the requisite strength, or who may be physically impaired (due to arthritis and so forth) to be able to operate such systems.

Further, in some cases where the latching system is used to maintain door/window or gate in an open position in very strong windy situations, the latch mechanism may not be strong enough to retain the receiving portion. Accordingly, the latch mechanism  
10 may release the door and/or window that typically slam closed as a result of the wind pressure applied to it. In order to overcome this problem, the spring may be particularly resilient thereby effecting problems discussed above in terms of the release of a latching apparatus to manually close the door or window when required.

In addition, the arrangement of such systems often means that in particularly windy  
15 situations there will be horizontal movement between the door/window and the fastening apparatus as the wind buffets the door/window. This continuing buffeting or vibration in windy situations may weaken the fastening apparatus, or may simply cause a repetitive noise that can become irritating to the occupant if it continues over extended periods.

Also, where the fastening apparatus includes a spring/latch type system, or a lever  
20 system, typically these are designed to fit either right-opening door/windows or left-opening windows. Whilst some may be designed to be interchangeable, most are not. Therefore it requires the purchase of the correct system for the correct position. If at some future stage the door or window is re-hung, a new latching system may be  
25 required.

It would therefore be advantageous to have fastening apparatus that incorporated

beneficial features of the above systems whilst at the same time obviating their disadvantages by:

- a) having a system that would be able to secure a door/window/gate or similar in an open position by merely applying minimal pressure from the door/window/gate against the fastening apparatus; and
- b) having a fastening apparatus that retained the door/window/gate in an open position irrespective of counter pressure or force applied thereto by wind or by physical forces applied to the door/window/gate; and
- c) providing a fastening apparatus that securely holds the door/window/gate in an open position without incumbent rattling on windy days; and
- d) is able to be released manually without the need to stretch or bend and with minimal discomfort or difficulty for the operator; and
- e) is able to fit left or right opening door/window/gate as required using the same fastening apparatus.

It is an object of the present invention to at least address some or all of the foregoing problems identified in prior art systems, or to provide the consuming public with an alternative choice.

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

## **DISCLOSURE OF INVENTION**

According to one aspect of the present invention there is provided fastening apparatus for maintaining a closure means in an opened position relative to a surface, said fastening apparatus including a latching portion and a receiving portion, said latching portion including a latch resiliently pivotable through a substantially vertical plane, and

said latching portion being configured to include a notched portion capable of receiving the receiving portion when engaged therewith, and said latching portion also including a substantially elongate lever portion capable of effecting release of the latching apparatus from the receiving apparatus, and the latching apparatus optionally including cushioning apparatus, and said fastening apparatus characterised by the latch being substantially biased towards the notched portion to apply tension onto a corresponding receiving portion when the receiving portion is engaged with the latch.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the latching apparatus includes a back plate for affixing the latching apparatus to the preferred surface.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the lever portion of the latching apparatus is centrally pivoted with respect to the back plate.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the notched portion is angled in a substantially perpendicular plane from the back plate in order to effect the required distance between the surface and the closure means to prevent damage to the closure means or ancillary structures thereon when the closure means is secured in an opened position.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the notched portion of the lever portion includes at least one notch for engaging with a corresponding receiving apparatus.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the opposite distal end of the lever portion is configured to enable downward pressure to be applied thereto by an operator

in order to release the latching apparatus from the receiving apparatus.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the cushioning apparatus is positioned to extend in a substantially perpendicular plane from the back plate of the latching apparatus, and to contact the closure means when the closure means is secured in a substantially open position by the fastening apparatus.

According to another aspect of the present invention there is provided fastening apparatus substantially as described above wherein the receiving apparatus is complementarily configured to enable it to receive the notched portion of the lever portion.

According to a further aspect of the present invention there is provided fastening apparatus substantially as described above wherein the latch apparatus may be reversible to effect use with either or both left-handed or right-handed opening closure means.

According to a further aspect of the present invention there is provided a method of manufacture of fastening apparatus substantially as described above, including the steps of:

- a) manufacturing a latching portion and
- b) manufacturing a receiving portion,
- c) said latching portion including a latch portion resiliently pivotable through a substantially vertical plane, and
- d) said latching portion also being configured to include a notched portion capable of receiving the receiving portion when engaged therewith, and
- e) said latching portion also including a substantially elongate lever portion



capable of effecting release of the latching apparatus from the receiving apparatus, and

f) the latching apparatus optionally including cushioning apparatus, and

the fastening apparatus characterised by the latch being substantially biased towards  
5 the notched portion to apply tension onto a corresponding receiving portion when the receiving portion is engaged with the latch.

For the purpose of this specification the term closure means shall mean and include any door, window, gate or similar structure that operates as a barrier for closing and opening an entrance, cupboard or such space, whether the closure means is hinged,  
10 sliding or revolving and so forth, and whatever the dimensions.

In preferred embodiments of the present invention, the receiving apparatus is typically applied to the door/window/gate or any other such closure means, required to be maintained and/or secured in an opened position for a preferred period of time. As the receiving apparatus is the less bulky portion of the fastening apparatus it is more  
15 logically applied to the closure means as it is less protrusive than the latching apparatus and therefore is less likely to get in the way of or impede normal operation of the closure means.

The receiving apparatus is preferably configured to be substantially U-shaped, although any suitable configuration may be employed. An elongated portion of the U-  
20 shaped receiving apparatus includes or is adapted to receive attachment apparatus to secure the receiving apparatus against the particular closure means.

The central portion of the U-shaped receiving apparatus is preferably also configured as required to effect engagement with the appropriately configured notched portion on the complementary latching apparatus.

25 In preferred embodiments the latching apparatus includes an affixing portion or back

plate to affix the latching apparatus to a surface against which the door, gate, window and so forth is required to be aligned adjacent thereto when in an opened position. Accordingly as with the receiving apparatus the back plate includes or is adapted to receive appropriate attachment apparatus for securing the back plate to the surface.

- 5 The surface may of course be an internal or external wall of a building or a support pose where the closure means is a gate, for example.

Substantially centrally located on the back plate there is provided a latching arm. The latching arm preferably includes a substantially elongate lever portion. Towards the leading distal end of the lever portion there is provided a substantially right-angled  
10 engaging portion hereinafter called the notched portion, whilst towards the trailing distal end of the elongate lever portion there is provided a handle portion.

The handle portion is configured to be substantially flattened in order to accommodate maximum contact between a person's foot or hand during application of appropriate pressure applied manually in order to release the latching apparatus from the receiving  
15 apparatus when the door/window/gate is required to be closed.

The engaging notched portion may include notches on both the upper and lower edges/surfaces of the engaging portion. This configuration enables the latching apparatus to be substantially reversed when required for use on either or both left or right opening closure means.

- 20 The notches may be configured as required to effect engagement with the complementary configured receiving apparatus.

To effect preferred operation of the latching apparatus there is centrally provided, relative to the elongate portion of the latching arm and substantially central to the back plate, resilient means in the form of spring. The resilient means is preferably attached  
25 to the elongate lever portion of the latching apparatus at the point at which the latching

apparatus is attached to the centre of the back plate. One end of the spring is attached to the engaging portion of the latching apparatus whilst the opposite end of the spring is anchored/attached to the back plate.

5 The spring is preferably positioned to effect pivotal movement of the latching apparatus through a substantially vertical plane.

However, the spring is arranged such that the leading distal end of the latching apparatus/arm is substantially biased downwards when the latching apparatus is not engaged with the receiving apparatus. Accordingly, this continuous bias in a substantially downward direction effects positive pressure on the receiving apparatus  
10 when the latching apparatus is engaged therewith. This arrangement operates to effect secure engagement and cooperation between the latching apparatus and the receiving apparatus even when strong winds may buffet the door/window/gate and may otherwise cause release of the latching apparatus from the receiving apparatus.

To further prevent the latching apparatus being released from the receiving apparatus  
15 there is preferably provided a restraining means. The restraining means preferably includes a substantially angled portion of the back plate that maintains the trailing distal end of the elongate portion of the latching arm in a preferred orientation.

To further improve the operation of the fastening apparatus there is also provided and positioned substantially over the point of attachment of the spring and the latching arm  
20 to the back plate, the cushioning apparatus. The cushioning apparatus is made of rubber or plastics material capable of being deformed to some extent when in contact with the closure means, and for providing a soft material that is unlikely to damage the surface of the closure means contacted by the cushioning apparatus.

In preferred embodiments, the cushioning apparatus extends from the back plate in a  
25 substantially perpendicular plane. The cushioning apparatus is substantially elongate and extends beyond the length of the latching arm such that when the latching

apparatus is engaged with the receiving apparatus the cushioning apparatus is substantially in line with the point of attachment of the receiving apparatus to the closure means.

5 Accordingly, in particularly windy situations the cushioning apparatus operates as a positive stop against the closure means, to prevent the closure means vibrating in the wind and/or generating noise as a result of the receiving apparatus rattling within the notched section of the latching arm. The cushioning apparatus also is designed to minimise or prevent damage to the closure means or structures thereon, such as the handle, as a result of the movement of the closure means in the wind.

10 Whilst the contact edge/face of preferred embodiments of the cushioning apparatus is substantially flat, it can be appreciated that this face may be ribbed or otherwise configured.

As also can be appreciated, the handle portion of the latching apparatus may also include ribbing or ridges, or may include a substantially rubber portion to improve grip  
15 on the handle.

As the fastening apparatus preferably attached to operate at the bottom of a closure means, it can be appreciated that the latching apparatus may be foot operated by simply applying foot pressure to the handle portion as required to release the engaging portion or latch from the receiving apparatus thereby enabling the closure means to be released  
20 and closed when required.

The fastening apparatus may be made from any suitable, preferably weather proof material, such as aluminium, plastics or fibreglass (preferably reinforced), stainless steel, and so forth. The preferred materials would be substantially durable, capable of withstanding the effects of weather and so forth. The cushioning apparatus may also  
25 be made from plastics material or rubber or any soft but durable deformable material capable of cushioning the door/window/gate as required to minimise noise due to

vibration during windy conditions.

As can be appreciated, this description has referred to use of the fastening apparatus on doors, windows or gates. However, it should be appreciated that the fastening apparatus may also be used in a range of other situations such as on tailgates on trailers  
5 or vehicles where temporary latching in a substantially opened position is required. Other applications may also be apparent to those skilled in the art.

It should also be appreciated that variations may be made to the invention to adapt the invention for use in a number of situations and those adaptations are also to be considered relevant to and encompassed within the description of this invention herein.

#### 10 **BRIEF DESCRIPTION OF DRAWINGS**

Further aspects of the present invention will become apparent from the following description which is given by way of example only and with reference to the accompanying drawings in which:

15 **Figure 1** a diagrammatic perspective view of the fastening apparatus in accordance with one preferred embodiment of the present invention; and

**Figure 2** a diagrammatic perspective view of the fastening apparatus in accordance with another preferred embodiment of the present invention.

#### **BEST MODES FOR CARRYING OUT THE INVENTION**

20 With reference to the diagrams by way of example only there is provided fastening apparatus (generally indicated by arrow 1).

As shown in Figures 1 and 2 the fastening apparatus (1) includes latching apparatus (generally indicated by arrow 2) and receiving apparatus (generally indicated by arrow 3).

The receiving apparatus (3) is typically applied to the door/window/gate or any other such closure means, required to be maintained and/or secured in an opened position for a preferred period of time.

The receiving apparatus of Figures 1 and 2 is configured to be substantially U-shaped.

- 5 An elongated portion (4) of the U-shaped receiving apparatus (3) includes or is adapted to receive attachment apparatus (at 5) to secure the receiving apparatus (3) against the particular structure, such as a wall, gate post, trailer body and so forth (not shown).

The opposite side (6) of the U-shaped portion is configured as required to effect engagement with the appropriately configured portion on the latching apparatus (2).

- 10 The latching apparatus (2) includes an affixing portion or back plate (7), to affix the latching apparatus (2) to a surface against which the door, gate, window and so forth is required to be aligned adjacent thereto when in an opened position.

Accordingly as similar to the receiving apparatus (3) the back plate (7) includes or is adapted to receive (at 5) appropriate attachment apparatus for securing the back plate

- 15 (7) to the surface.

Substantially centrally located (at 8) on the back plate (7) there is provided a lever portion (10). The lever portion includes a substantially elongate notched portion (9) extending at a right-angle from the lever portion. Towards the leading distal end (11) of the notched portion (9) there is provided an engaging portion (12), whilst towards  
20 the trailing distal end (13) of the elongate lever portion (10) there is provided a handle portion (14).

The handle portion (14) is configured to be substantially flattened in order to receive appropriate pressure applied manually in order to release the latching arm/notched portion (9) from the receiving apparatus (3) when the door/window/gate is required to

- 25 be closed.

The engaging portion (12) of the latching arm (9) includes a substantially notched section(s) (15). As can be seen in Figure 2 the engaging portion (12) may include notches (15) on both the upper (16) and lower (17) surfaces of the engaging portion (12). This configuration enables the latching apparatus to be substantially reversed  
5 when required for use on either or both left or right opening closure means.

The notches (15) may be configured as required to effect engagement with the complementary configured receiving apparatus (3).

To effect operation of the latching arm (9) there is provided substantially central (at 8) relative to the back plate, resilient means in the form of spring (18), the resilient means  
10 (18). One end of the spring is attached (at 19) to the elongate notched portion (9) of the lever portion (10) and is resiliently wound at the point at which the lever portion (10) is attached to the centre (8) of the back plate (7). The opposite end of the spring is attached (at 20) to the back plate.

The spring (18) is positioned to effect the pivotal movement of the latching apparatus  
15 (2) through a substantially vertical plane.

However, the spring (18) is arranged such that the leading distal end (11) of the latching arm (9) is substantially biased downwards when the latching apparatus (2) is not engaged with the receiving apparatus (3). Accordingly, this continuous bias in a substantially downward direction effects positive pressure on the receiving apparatus  
20 (3) when the latching apparatus (2) is engaged therewith. The downwards positive pressure further operates to effect secure engagement and cooperation between the latching apparatus (2) and the receiving apparatus (3) even when strong winds may buffet the door/window/gate and may otherwise cause release of the latching apparatus (2) from the receiving apparatus (3).

25 To further prevent the latching apparatus (2) being released from the receiving apparatus (3) there is provided a restraining means (21). The restraining means (21) as

shown in Figure 1 includes a substantially angled portion (21) of the back plate (7) that maintains the trailing distal end (13) of the elongate portion (10) of the latching arm (9) in a preferred orientation.

5 To further improve the operation of the fastening apparatus (1) there is also provided and positioned substantially over the point of attachment (at 8) of the spring (18) and the latching arm (9) to the back plate (7), the cushioning apparatus (22). The cushioning apparatus is made of substantially rubber or thermoplastics material capable of being deformed to some extent when in contact with the closure means.

10 The cushioning apparatus (22) extends from the back plate (7) in a substantially perpendicular plane. The cushioning apparatus (22) is substantially elongate and extends beyond the length of the latching arm (9) such that when the latching apparatus (2) is engaged with the receiving apparatus (3) the cushioning apparatus (22) is substantially in line with the point of attachment of the receiving apparatus (3) to the closure means.

15 Accordingly, in particularly windy situations the cushioning apparatus operates as a positive stop to prevent the closure means vibrating in the wind and causing noise as a result of the receiving apparatus (3) rattling within the notch (15) of the latching arm (9). The cushioning apparatus (22) further acts to prevent damage to the closure means or any structure extending from the planar surface thereof, such as a handle or door knob due movement of the closure means against the adjacent surface, in the wind.

20 Whilst the contact edge (23) as shown in Figure 1 is substantially flat, it can be appreciated that this face (23) may be ribbed or otherwise configured.

As also can be appreciated, the handle portion (14) of the latching arm (9) may also include ribbing or ridges, or may include a substantially rubber portion to improve grip.

25 on the handle.

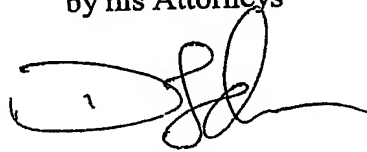


As the fastening apparatus (1) preferably attached to operate at the bottom of a closure means, it can be appreciated that the latching apparatus (2) may be foot operated by simply applying foot pressure to the handle portion (14) as required, to release the engaging portion or latch (12) from the receiving apparatus (3) to enable the closure  
5 means to be closed when required.

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.

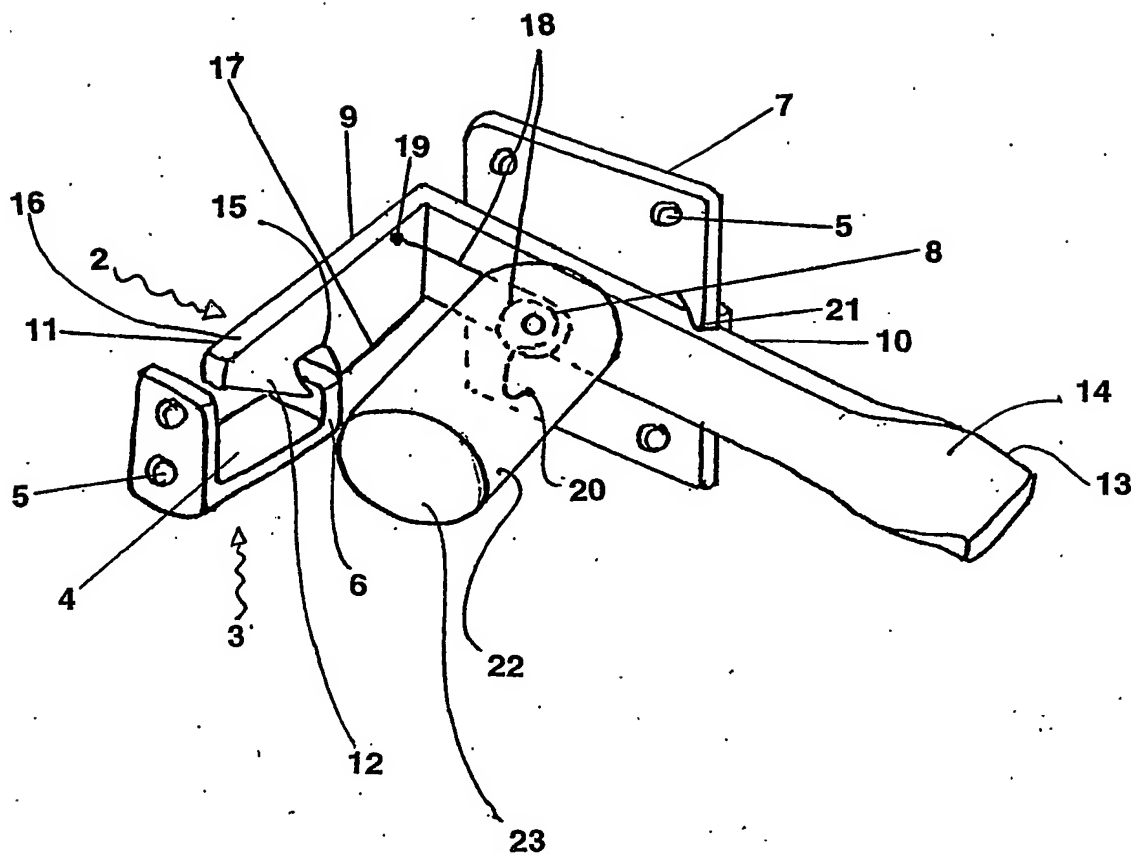
**DAVID FALKNER WALLACE**

by his Attorneys

A handwritten signature in dark ink, appearing to be 'J & W', is written over a horizontal line.

**JAMES & WELLS**

**FIGURE 1**



**FIGURE 2**